

# Brodhead Water & Light

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PUBLIC SERVICE

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RSC  
05-GF-113  
(740)

January 28, 2003

Mr. Scot Cullen, Chief Electric Engineer  
Public Service Commission  
610 N. Whitney Way  
P.O. Box 7854  
Madison, WI 53707-7854

RE: In the Matter of Filing Reporting Requirements for Appropriate Inspection and  
Maintenance, PSC Rule 113.0607(6)

Dear Mr. Cullen:

Enclosed for filing are 3 copies of Brodhead Water & Light's report to the commission,  
submitted every two years, showing compliance with its Preventative Maintenance Plan.

Very truly yours,



Carroll Sheafor  
Supt. Brodhead Water & Light

Enclosures

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JUL 1 2003

Electric Division

**TWO YEAR REPORT DOCUMENTING  
COMPLIANCE WITH THE  
PREVENTATIVE MAINTENANCE PLAN**

**BRODHEAD WATER & LIGHT**

**FILING DEADLINE  
FEBRUARY 1, 2003**

JANUARY 28, 2003

CARROLL SHEAFOR

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JAN 29 2003

Electric Division

This report format was prepared by the MEUW work group for PSC Rule 113.0607 for use by the 82 municipal electric utilities in Wisconsin and endorsed by PSC staff as meeting the requirements of Rule PSC 113.0607.

## **I Reporting Requirements:** PSC 113.0607(6) states;

Each utility shall provide a periodic report to the commission showing compliance with its Preventative Maintenance Plan. The report shall include a list of inspected circuits and facilities, the condition of facilities according to established rating criteria, schedules established and success at meeting the established schedules.

## **II Inspection Schedule and Methods:**

SCHEDULE:	MONTHLY	ANNUAL	EVERY 5 YEARS
Transmission ( $\geq 69\text{Kv}$ )		X	X
Substations	X	X	
Distribution (OH & UG)			X

METHODS: Five criteria groups will be used to complete the inspection of all facilities.

1. IR – infrared thermography used to find poor electrical connections and/or oil flow problems in equipment.
2. RFI - Radio Frequency Interference, a byproduct of loose hardware and connections, is checked using an AM radio receiver.
3. SI – structural integrity of all supporting hardware including poles, crossarms, insulators, structures, bases, foundations, buildings, etc.
4. Clearance – refers to proper spacing of conductors from other objects, trees and conductors.
5. EC – equipment condition on non-structural components such as circuit breakers, transformers, regulators, reclosers, relays, batteries, capacitors, etc.

Distribution facilities will be inspected by substation circuits on a 5 year cycle such that the entire system will be inspected every 5 years. Inspector instructions for inspecting all facilities and forms are included in the plan.

## **III Condition Rating Criteria**

This criterion, as listed below, establishes the condition of a facility and also determines the repair schedule to correct deficiencies .

- 0) Good condition
- 1) Good condition but aging
- 2) Non-critical maintenance required – normally repair within 12 months
- 3) Priority maintenance required – normally repair within 90 days
- 4) Urgent maintenance required – report immediately to the utility and repair normally within 1 week

#### **IV Corrective Action Schedule**

The rating criteria as listed above determine the corrective action schedule.

#### **V Record Keeping**

All inspection forms and records will be retained for a minimum of 10 years. The inspection form contains all of the required critical information i.e. inspection dates, condition rating, schedule for repair and date of repair completion.

#### **VI Reporting Requirements**

A report and summary of this plan's progress will be submitted every two years with the first report due to the Commission by February 1, 2003. The report will consist of a cover letter documenting the percent of inspections achieved compared to the schedule and the percent of maintenance achieved within the scheduled time allowance.

#### **VII Inspected Circuits and Facilities**

During the past two years, Brodhead Water and Light inspected the entire underground and overhead distribution system.

Base load and peaking generation, less than 50 megawatts per unit in size, is typically subject to pre-operational checks, in addition to checks and maintenance during and after periods of operation. Emergency generation is test run and maintained every *6 months* to confirm its operational readiness.

#### **VIII Scheduling Goals Established and Success of Meeting the Criteria:**

Transmission – The line is inspected annually and no problems were found.

Substations – The three substations are inspected weekly and monthly. The only problem was found during an IR inspection that noted hot connections on switches for reclosers. This was a class 2 problem. All recloser switches were repaired within 60 days.

Distribution Overhead – The entire system was inspected and the following class 2 problems were found and repaired within 1 year.

- 2 broken strand neutrals
- 2 broken ground rod connections
- 1 chipped insulator
- 15 guy guards

Also the following class 4 problems were found and repaired the same day

6 blown arrestors  
hot jumper connections at the same corner as the arrestors

Distribution Underground - All equipment had the signage updated to current requirements and one transformer was found to be rusting out in the window area and will be replaced this summer.

## **IX Facility condition – rating criteria:**

The Brodhead Water and Light system is in good condition. In the past two years there have been no outages as a result of failed equipment. Storm related problems have decreased because of the aggressive tree trimming program and the remaining outages were the result of a car accident and transmission outages.